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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/404,826	09/24/1999	MICHAEL J. HAWTHORNE	509/35644	8826

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BARNES & THORNBURG
750-17TH STREET NW
SUITE 900
WASHINGTON, DC 20006

EXAMINER	
KISS, ERIC B	

ART UNIT	PAPER NUMBER
2192	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/404,826	HAWTHORNE ET AL.	
	Examiner	Art Unit	
	Eric B. Kiss	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7,9,10,12-21,46-49 and 51* is/are pending in the application.

4a) Of the above claim(s) *12-14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7,9,10,15-21,46-49 and 51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12 May 2005 has been entered. Claims 1-4, 7, 9, 10, 12-21, 46-49, and 51 are pending.

2. Claims 12-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim (see Response to Arguments and the rejection(s) of claim 1 below).

Response to Arguments

3. Applicant's arguments, based on the newly recited claim limitations, are addressed below in the rejection of claim 1.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-3, 7, 9, 10, and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,786,998 to Neeson et al. in view of U.S. Patent No. 5,533,695 to Heggestad et al.

As per claim 1, *Neeson et al.* discloses collecting event recorder data, train performance data and track data from onboard in files on the on-board computer (see column 1, line 51 through column 2, line 4; and column 8, lines 11-24); determining onboard if a remote station is within communication range (see column 5, lines 16-32; and column 7, line 63 through column 8, line 3); and initiating from onboard wireless communication between an on-board computer (field unit) and a remote station (base station; see column 7, lines 29-47). *Neeson et al.* discloses a pair of frequencies being used for communications between base stations and the locomotive MCP. One frequency is used for transmissions from the base station to the locomotive, and another is used for transmissions from the locomotive to the base station (see col. 5, lines 23-27). The locomotive must initiate communication on the base station's receiving frequency because the base station does not transmit data at this frequency and therefore, cannot initiate such communication. Further, if a base station were to initiate communication with a locomotive MCP, then the locomotive must receive, process, and respond to such initiation. In other words, the initial data packet(s) transmitted by the base station must be understood by the MCP as being from a base station within range (otherwise such communication would not be possible/successful), and further, the MCP must acknowledge such initiating with an appropriate response, *i.e.*, the MCP must carry out its own communication initiating procedures to enable communication to take place with the base station. Without providing this basic functionality, the prescribed communication system would not be able to exchange data between the base station

and the locomotive MCP. Communication must be established on both ends for the system to function. *Neeson et al.* further disclose determining onboard which of the files are new since last transmission, and transferring the new files to the remote station (see column 5, lines 1-15).

Neeson et al. fails to explicitly disclose determining onboard the location of the train and the location of the next remote station using location information about the train and the remote stations stored on the computer onboard the train. However, *Heggestad et al.* teaches an incremental train control system in which multiple base stations (wayside interface units and wayside control units) are located at various intervals along a railroad track (see, for example, col. 4, line 66, through col. 5, line 13 of *Heggestad et al.*). The onboard computer of a locomotive communicates with the wayside equipment via a radio link (see, for example, col. 5, lines 33-35 of *Heggestad et al.*). Each wayside unit is responsible for the control of trains within a local area covered by each unit (see, for example, col. 6, lines 50-56 of *Heggestad et al.*). The onboard computer, already knowing the exact location of the train, transmits a request for authority to the appropriate nearby wayside unit (see, for example, col. 7, lines 6-20 of *Heggestad et al.*; see also col. 9, line 15, through col. 10, line 25). *Heggestad et al.* further teaches the location of the train and the location of the nearby wayside unit being stored in the computer onboard the train (see, for example, see, for example, col. 7, lines 6-20 of *Heggestad et al.*; see also col. 9, line 15, through col. 10, line 25). Therefore, it would have been obvious to one of ordinary skill in the computer art at the time the invention was made to modify the system of *Neeson et al.* to include such determining the location of the train and the location of the appropriate remote station as per the teachings of *Heggestad et al.* On would be motivated to do so to as part of using a known means of overcoming known deficiencies in the ATCS (Advanced

Train Control System) on which *Neeson et al.* is based (see, for example, col. 2, lines 9-29 of *Heggestad et al.*).

As per claims 2 and 3, *Neeson et al.* discloses determining whether a remote station has updates to be transferred and transferring the updates, including software updates (configuration changes) to the on-board computer (see column 19, lines 49-67). Therefore, for reasons stated above, such claims also would have been obvious.

As per claim 7, *Neeson et al. further* discloses resuming file transfers during subsequent communication sessions after an interruption of wireless communication (see column 14, line 10 through column 15, line 34). Therefore, for reasons stated above, such a claim also would have been obvious.

As per claim 9, *Neeson et al. further* discloses files including data from plural event recorders (intelligent devices) that transfer data to the on-board computer (processing device; see column 4, lines 44-57). Therefore, for reasons stated above, such a claim also would have been obvious.

As per claim 10, *Neeson et al. further* discloses the plural event recorders each connected to a respective on-board computer (intelligent devices have computer processing – "receive and understand" capabilities; see column 2, lines 5-27), initiating wireless communication between the on-board computers (intelligent devices) and the remote station (intelligent devices communicate to the base stations via the processing device), and transferring event recorder data from each of the on-board computers to the remote station (see column 4, line 33 through column 5, line 15). Therefore, for reasons stated above, such a claim also would have been obvious.

As per claim 15, *Neeson et al. further* discloses establishing communication between a remote station (base station) and a home base station (front end processor), and determining what files need to be transferred and transferring the files (see column 8, lines 11-18 and lines 40-44). Therefore, for reasons stated above, such a claim also would have been obvious.

As per claim 16, *Neeson et al. further* discloses transferring operational data for the onboard computer (traffic control information; see column 8, lines 18-24) from the home base station (front end processor) to the remote station (base station). Therefore, for reasons stated above, such a claim also would have been obvious.

As per claims 17 and 18, *Neeson et al. further* discloses transferring operation information of the remote station, including locomotives contacted (locomotive ID) from the remote station (base station) to the home base station (front end processor; see column 12, lines 50-67). Therefore, for reasons stated above, such claims also would have been obvious.

As per claim 19, *Neeson et al. further* discloses establishing communication between the remote station (base station) and the home base station (front end processor) when requested by a user or according to a schedule (see column 10, lines 19-24). Therefore, for reasons stated above, such a claim also would have been obvious.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Neeson and *Heggestad* as applied to claim 1 above, and further in view of U.S. Patent No. 5,848,064 to Cowan.

As per claim 4, Neeson teaches transferring updates to the on-board computer (see column 19, lines 49-67) but fails to teach comparing the version of a file in the on-board

computer to the version of a file in the remote station to affect what is transferred. However, Cowan teaches changing the operating software of mobile terminals by detecting a change in a software version identifier in a remote station (host computer) and transferring the change (new version) resulting from the comparison (see column 6, lines 41-51). Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to modify the software updating method of Neeson to include the version comparison of Cowan. One would be motivated to do so to ensure that on-board computer's software is kept up-to-date.

7. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neeson and *Heggestad* as applied to claim 1 above, and further in view of U.S. Patent No. 5,420,883 to Swensen et al.

As per claims 20 and 21, Neeson teaches transferring files between an on-board computer and a remote station (base station; see column 8, lines 11-24) but fails to teach transferring files between remote stations. However, Swensen teaches a hierarchical scheme in which remote stations (trackside radios) retransmit received messages to other, different level, remote stations within a subnet (see column 5, line 64 through column 6, line 29 and Figure 12). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Neeson method to include the retransmitting scheme of Swensen. One would be motivated to do so to allow for contacting a train or remote station where a direct link is not possible.

8. Claims 46-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neeson and *Heggestad* as applied to claim 1 above, and further in view of U.S. Patent No. 5,785,283 to Ehrenberger et al.

As per claims 46 and 47, Neeson teaches transferring data from a remote station to an on-board computer and from an on-board computer to a remote station (base station; see column 8, lines 11-24) but fails to teach transferring track data or displaying track data on the train. However, Ehrenberger teaches transferring track data (wayside defects) from a remote station (wayside system) to an on-board computer (see Figure 1) and displaying the track data on the train (see column 3, lines 9 through 21). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Neeson method to include transferring track data to the on-board computer and displaying the track data as taught by Ehrenberger and subsequently transferring the track data to another remote station. One would be motivated to do so to keep the train operator informed of potential hazards in the area and to disseminate the information to other train operators in the system.

As per claim 48, in addition to the teachings applied above, Ehrenberger further suggests other types of track data, including status of a highway crossing analyzer (see column 6, lines 52-59). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the Neeson method to include track information such as crossing gate position or crossing occupancy status as per the suggestion of Ehrenberger. One would be motivated to do so to communicate a potential highway crossing hazard to the locomotive operator in advance of the train approaching the highway crossing.

As per claim 49, in addition to the teachings applied above, it would have been furthermore obvious to include correlating train performance data with track data, e.g. making a change in speed in response to a detected potential hazard.

9. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Neeson and *Heggestad* as applied to claim 1 above, and further in view of U.S. Patent No. 5,620,155 to Michalek.

As per claim 51, in addition to the disclosure and teachings applied above, Neeson fails to expressly disclose the use of GPS to determine the location of the train. However, Michalek teaches such a use of GPS to determine the location of a train (see, for example, cols. 6 and 8). Therefore, it would have been obvious to one of ordinary skill in the computer art at the time the invention was made to further modify the Neeson method to include such use of GPS as per the teachings of Michalek. One would be motivated to do so to more accurately determine the location of trains (to within several yards).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric B. Kiss whose telephone number is (571) 272-3699. The Examiner can normally be reached on Tue. - Fri., 7:00 am - 4:30 pm. The Examiner can also be reached on alternate Mondays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Tuan Dam, can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature should be directed to the TC 2100 Group receptionist: 571-272-2100.

EBK/ESK
June 8, 2005

TUAN DAM
SUPERVISORY PATENT EXAMINER